



CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005



Job No.: CTCE/BBMP/W.No.11/BS/CSR-10/172b/CEMENT/2016-17

Date: 21.10.2016

TEST REPORT ON CEMENT

* CUSTOMER	:	Asst. Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
*AGENCY	:	Mr. B. Shankar, Huttanahalli Village, Chikkajala Post, Bangalore North.
*NAME OF THE WORK	:	Improvements and asphaltting to Teachers Layout and Raghavendra Colony cross roads in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division, BBMP, Bangalore.
*REFERENCE	:	AEE/BBMP/VSD/PR/230/2016-17 Dated: 20.10.2016
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	20.10.2016
PERIOD OF TESTING	:	20.10.2016 to 21.10.2016



The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	145 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	480 Minutes	Not More than 600 Minutes
3	Soundness by Le Chatelier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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Job No.: CTCE/BBMP/W.No.11/BS/CSR-10/172b/SAND-Gradation/2016-17

: 21.10.2016

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

* **Customer** : Asst. Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

* **Agency** : Mr. B. Shankar,
Huttanahalli Village, Chikkajala Post, Bangalore North.

* **Name of Work** : Improvements and asphaltting to Teachers Layout and Raghavendra Colony cross roads in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : AEE/BBMP/VSD/PR/230/2016-17 Dated: 20.10.2016

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 20.10.2016

Date of Testing : 21.10.2016



Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	95.10	90-100	90-100	90-100	95-100
2.36	76.60	60-95	75-100	85-100	95-100
1.18	55.30	30-70	55-90	75-100	90-100
600 Micron	27.10	15-34	35-59	60-79	80-100
300 Micron	14.60	5-20	8-30	12-40	15-50
150 Micron	5.10	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Job No.: CTCE/BBMP/W.No.11/BS/WMM/Gradation/2016-17

: 20.10.2016

GRADATION FOR WMM MORTH TABLE-400-11

Customer : Asst. Executive Engineer, Vidyananyapura Sub Division, BBMP, Bangalore.

Agency : Mr. B. Shankar,
Huttanahalli Village, Chikkajala Post, Bangalore North.

Name of Work : Improvements and asphaltting to Teachers Layout and Raghavendra Colony cross roads in Ward No.11 (Kuvempunagara), Vidyananyapura Sub Division, BBMP, Bangalore.

Reference : AEE/BBMP/VSD/PR/230/2016-17 Dated: 20.10.2016

Date of Testing : 20.10.2016

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 5000



Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	130	130	2.6	97.4	95-100
22.4	1650	1780	35.6	64.4	60-80
11.2	560	2340	46.8	53.2	40-60
4.75	815	3155	63.1	36.9	25-40
2.36	840	3995	79.9	20.1	15-30
0.600	350	4345	86.9	13.1	8-22
0.075	550	4895	97.9	2.1	0-8

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Handwritten signature in green ink
AEE (VRP) SD

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Job No.: CTCE/BBMP/W.No.11/BS/WMM/AIV/2016-17

20.10.2016

Aggregate Impact Value

IS: 2386 Part IV

Customer	Asst. Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
Agency	Mr. B. Shankar, Huttanahalli Village, Chikkajala Post, Bangalore North.
Name of the Work	Improvements and asphaltting to Teachers Layout and Raghavendra Colony cross roads in Ward No.11 (Kuvempunagara), Vidyanarayapura Sub Division, BBMP, Bangalore.
Reference	AEE/BBMP/VSD/PR/230/2016-17 Dated: 20.10.2016
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	20.10.2016



Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	389	392	22.35
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	88	89	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	303	
4	Aggregate Impact value = percent fines	22.62	22.70	
	$100 * (W_2/W_1) \%$			

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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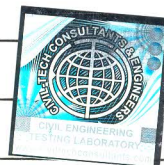


Job No.: CTCE/BBMP/W.No.11/BS/WMM/S-T/2016-17

20.10.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	Asst. Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
Agency	Mr. B. Shankar, Huttanahalli Village, Chikkajala Post, Bangalore North.
Name of Work	Improvements and asphaltting to Teachers Layout and Raghavendra Colony cross roads in Ward No.11 (Kuvempunagara), Vidyanarayapura Sub Division, BBMP, Bangalore.
Reference	AEE/BBMP/VSD/PR/230/2016-17 Dated: 20.10.2016
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	20.10.2016



Result : Flakiness Index = 11.39%

Elongation Index = 13.25%

Result : Combined Flakiness & Elongation index 24.64%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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20.10.2016

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

*CUSTOMER	:	Asst. Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
*AGENCY	:	Mr. B. Shankar, Huttanahalli Village, Chikkajala Post, Bangalore North.
*NAME OF THE WORK	:	Improvements and asphaltting to Teachers Layout and Raghavendra Colony cross roads in Ward No.11 (Kuvempunagara), Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	:	AEE/BBMP/VSD/PR/230/2016-17 Dated: 20.10.2016
*SAMPLE ID	:	Bitumen
DATE OF SAMPLING	:	18.10.2016
DATE OF TESTING	:	20.10.2016



The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 °C, 1/10 mm	IS :1203 -1978 (RA-2009)	84	80 to 100
2	Softening point, °C	IS :1205 -1978 (RA-2009)	45	Min. 40
3	Ductility at 27°C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 75
4	Flash Point, °C	IS :1209 -1978 (RA-2009)	296	Min. 220

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Handwritten signature and stamp: VISHWANATH. I.A. Chief Executive Officer

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Job No.: CTCE/BBMP/W.No.11/BS/SDBC/Bitumen/2016-17

22.10.2016

BITUMEN DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC : SP : 11 - 1984

CUSTOMER	Asst. Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
AGENCY	Mr. B. Shankar, Huttanahalli Village, Chikkajala Post, Bangalore North.
NAME OF THE WORK	Improvements and asphaltting to Teachers Layout and Raghavendra Colony cross roads in Ward No.11 (Kuvempunagara), Vidyanarayapura Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/VSD/PR/230/2016-17 Dated: 20.10.2016
SAMPLE I/D	Roads in Teachers Layout Ward No.11, BBMP, Bangalore.
DATE OF TESTING	22.10.2016



BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	474.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.5	25.50
7. Bitumen content in %	5.10	5.10
8. Average	5.10	

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22.10.2016

GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS : 2386 and IRC : SP : 11 - 1984

CUSTOMER	Asst. Executive Engineer, Vidyanarayapura Sub Division, BBMP, Bangalore.
AGENCY	Mr. B. Shankar, Huttanahalli Village, Chikkajala Post, Bangalore North.
NAME OF THE WORK	Improvements and asphaltting to Teachers Layout and Raghavendra Colony cross roads in Ward No.11 (Kuvempunagara), Vidyanarayapura Sub Division, BBMP, Bangalore.
REFERENCE	AEE/BBMP/VSD/PR/230/2016-17 Dated: 20.10.2016
SAMPLE I/D	Roads in Teachers Layout Ward No.11, BBMP, Bangalore.
DATE OF TESTING	22.10.2016



GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	25.36	5.34	5.34	94.66	90-100
4.75	248.96	52.47	57.81	42.19	35-51
2.36	54.32	11.45	69.26	30.74	24-39
1.18	51.26	10.80	80.06	19.94	15-30
0.3	28.79	6.07	86.13	13.87	9-19
0.075	37.98	8.00	94.13	5.87	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	33.68	7.10	7.10	92.90	90-100
4.75	259.87	54.77	61.87	38.13	35-51
2.36	56.32	11.87	73.73	26.27	24-39
1.18	42.15	8.88	82.62	17.38	15-30
0.3	25.68	5.41	88.03	11.97	9-19
0.075	30.27	6.38	94.41	5.59	3-8

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